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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,362	10/10/2000	Holger Hubner	GR 98 P 1513	3999

7590 08/27/2002

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EXAMINER
WARREN, MATTHEW E

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/685,362	Applicant(s) HUBNER ET AL.
	Examiner Matthew E. Warren	Art Unit 2815

-- The MAILING DATE of this communication app ars on th cov r she t with th correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

This Office Action is in response to the Amendment filed on June 7, 2002.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (US 5,563,762) in view of Matsuoka et al. (US 6,130,449).

Leung et al. shows (fig. 3) a semiconductor component comprising a first metal layer forming a first metal area(128) and a second metal area (126) electrically isolated from each other. A dielectric layer (130) is formed over the first metal area. A second metal layer (134) forms a third metal area insulated from the first metal layer by an interposition of said dielectric layer, the second metal layer together with the dielectric layer and the first metal area form a memory element. The second metal layer (134) further forms a fourth metal area which together with the second metal area (126) forms a contact area to make contact with the second metal layer (134). The fourth metal area makes direct contact with the second metal area. The first and second metal layers are composed of a noble metal including platinum and the dielectric is composed of a ferroelectric (col. 11, line 43-col. 12, line 4). Leung et al. shows all of the elements of the claims except the insulating layer covering the contact area of the memory element

and having an opening leading to the contact area. Matsuoka et al. shows (fig. 1) semiconductor device in which an additional insulating layer (901) is formed over a contact (704). An opening is formed in the insulating layer and leads to the contact area. The opening is filled with conductive material to form an external connection to the contact area. With respect to the limitations of claim 2, the contact area of combined cited references inherently forms an etching resist because it has the same structure and materials as the instant invention. With respect to the etching process of claim 2, a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, **190 USPQ 15 at 17**(footnote 3). See also in re Brown, **173 USPQ 685**: In re Luck, **177 USPQ 523**; In re Fessmann, **180 USPQ 324**: In re Avery, **186 USPQ 116** in re Wertheim, **191 USPQ 90** (**209 USPQ 254** does not deal with this issue); and In re Marosi et al, **218 USPQ 289** final product per se which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above case law makes clear. "Even though product-by- process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985)(citations omitted). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made

to modify the capacitor and adjacent contact of Leung by enclosing the contact with an insulating layer and adding a conductive layer as taught by Matsuoka to form an external electrical connection to the contact.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (US 5,563,762) in view of Matsuoka et al. (US 6,130,449) as applied to claim above, and further in view of Kuroiwa et al. (US 6,239,460 B1).

Leung et al. in view of Matsuoka et al. shows all of the elements of the claims except the fourth metal area separated from the second metal area by interposition of the dielectric layer. Kuroiwa et al. shows (fig. 1) a semiconductor device wherein a fourth metal area (116 right) is separated from a second metal area (130 right) by a dielectric layer (115) to form a second capacitor. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the contact of Leung and Matsuoka by forming a dielectric layer between a second and fourth metal area as taught by Kuroiwa to form a second connected capacitor.

Response to Arguments

Applicant's arguments filed with respect to claims 1-9 have been fully considered but they are not persuasive. The applicant primarily asserts that the cited references do not show all of the elements of the claims, specifically an insulation layer covering the contact area...and an electrically conductive material filling an opening for making contact with the second metal layer. As stated in the rejection, Leung et al. showed all

of the elements of the claims except the insulation layer covering the contact area and the conductive material for the contact. Leung opts for electrical contact to be made at a lower bond pad portion beneath the capacitor and the contact area. However, such contact is one of many alternative ways to make electrical contact to such a memory device. As shown in Matsuoka et al., an insulating layer is formed on top of a contact area and an electrically conductive material fills an opening in the insulating layer to make electrical contact with the contact area. The contact is necessary to provide an external connection to the lower components of the device because there are multiple levels of metallization. Because the memory device of Matsuoka has such a high density of components, the conductive material is formed above the contact area instead of below. One of ordinary skill would look to Matsuoka and realize that high density devices require an upper metallization layers contacts formed above the semiconductor. For these reasons the references are combinable and thusly show all of the elements of the claims. Therefore the 103 rejection above is still proper and this action is made **final**.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MEW
MEW
August 21, 2002

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800